

THAT WHICH IS CLAIMED:

1. A method for adjusting a received bit detection threshold in a digital communication system, the method comprising:

5 receiving a self-generated broadcast signal;
determining a median value of the self-generated broadcast signal; and
adjusting the bit detection threshold based on the median value.

10 2. The method of Claim 1, further comprising digitizing the received self-generated broadcast signal prior to determining the median value of the self-generated broadcast signal.

15 3. The method of Claim 1, wherein the step of receiving a self-generated broadcast signal further comprises receiving an ownship broadcast signal and wherein the step of determining a median value of the self-generated broadcast signal further comprises determining a median value of the ownship broadcast signal.

20 4. The method of Claim 1, wherein determining a median value of the self-generated broadcast signal further comprises:

detecting a positive peak frequency value and a negative frequency peak value for the self-generated broadcast signal; and
determining a peak-to-peak deviation of the self-generated broadcast signal.

25 5. The method of Claim 4, further comprising filtering the peak-to-peak deviation to substantially reduce short-term jitter and define the bit detection threshold value.

30 6. The method of Claim 4, wherein detecting a positive peak value and a negative frequency peak value for a self-generated broadcast signal further comprises

detecting a positive peak value and a negative frequency peak value substantially concurrent with the self-generated broadcast signal being transmitted.

7. The method of Claim 1, wherein the step of receiving a self-generated
5 broadcast signal further comprises receiving a self-generated broadcast signal through an intermediate level frequency feedback path.

8. The method of Claim 1, wherein the step of receiving a self-generated
broadcast signal further comprises receiving a self-generated broadcast signal through a
10 transmit signal level frequency feedback path.

9. A method for adjusting a received bit detection threshold in a TDMA communication system, the method comprising:

15 receiving an analog ownship broadcast signal;
digitizing the analog ownship broadcast signal at a predefined data rate;
detecting a positive peak value and a negative frequency peak value from
the digitized ownship signal;
calculating a peak-to-peak deviation for the digitized ownship signal based
on the positive and negative frequency peak values; and
20 adjusting the bit detection threshold based on the peak-to-peak deviation.

10. The method of Claim 9, further comprising filtering the calculated peak-to-peak deviation to reduce short-term jitter.

25 11. A bit detection threshold adjustment circuit implemented in a TDMA communication device, the circuit comprising:

an analog-to-digital (A/D) converter that digitizes an analog baseband input signal by sampling the signal at a predefined date rate;
a positive peak detector in electrical communication with the A/D
30 converter that receives the signal from the A/D converter and determines a positive peak value;

a negative frequency peak detector in electrical communication with the A/D converter that receives the signal from the A/D converter and determines a negative frequency peak value;

- 5 a calculation task unit in data communication with the negative and positive peak detectors that calculates a peak-to-peak deviation to formulate a bit detection threshold value; and

10 a bit detector in data communication with the calculation task unit and in electrical communication with the A/D converter that receives the digitized signal from the A/D converter and the bit detection threshold value from the calculation task unit for the purpose of converting the digitized signal to a digitized bit stream of data.

12. The bit detection threshold adjustment circuit of Claim 11, wherein the positive peak detector and the negative frequency peak detector are activated to detect frequency peaks when the TDMA communication device begins sending a signal and are deactivated when the TDMA communication device completes sending the signal.

13. The bit detection threshold adjustment circuit of Claim 11, further comprising a filter in data communication with the calculation task unit that filters the peak-to-peak deviation value to reduce short-term jitter.